

Market Renewal - Energy Work Stream

May 2018: Response to Stakeholder Feedback

Following the May 23 & 24, 2018 Market Renewal - Energy Work Stream stakeholder meeting, and the June 7, 2018 Intertie Transactions Stakeholder Discussion Webinar, the IESO invited stakeholders to provide comments and feedback on a wide range of design options and preliminary decisions associated with the Energy Work Stream.

The IESO received feedback from:

ADG

AMPCO

APPrO

HQ Energy Marketing

MAG

OPG

Power Advisory LLC (for the Consortium of Renewable Generators and Storage Providers)

Power Advisory LLC (for the Distributed Energy Resources Advisory Committee)

This feedback has been posted on the IESO stakeholder webpage for these engagements.

Note on Feedback Summary

Feedback from stakeholders highlighted a number of important issues and considerations across many different design elements including: Commercial Mechanisms, Congestion Rent & Loss Residuals, Energy Price – Loss Component, Financial Transmission Rights, General Issues, Intertie Transactions, Make Whole Payments, Market Power Mitigation, Must Offer Requirements, Offer Changes, Participation, Reference Levels, Submission and Posting Deadlines, Two Settlement for Supply, Uplift Recovery, and Virtual Transactions. The key themes highlighted include:

- The need to understand contract implications related to IESO’s Market Renewal Program.
- Concerns about how Congestion Rents and Loss Residuals will be allocated and if disbursement will be temporary.
- Comments and concerns over a range of issues related to Intertie Transactions.
- Concerns about the impact of Two-Settlement on Variable Generators.
- The need for clarity over participation opportunities and requirements for Distributed Energy Resources.
- Interest in and support for implementing Virtual Transactions.
- Questions over Market Power Mitigation, Offer Changes, Must-Offer Requirements, and Reference Levels.

Stakeholders also provided a number of individual comments and recommendations on the design elements and options presented.

The IESO appreciates the feedback received from stakeholders. This stakeholder feedback, along with the comments provided at the stakeholder engagement sessions, is important to the collaborative approach the IESO has committed to under the Market Renewal Program and will help inform the design decisions. All feedback received has been noted and will be considered as the engagement moves toward making preliminary decisions. Stakeholders will have additional opportunities to provide feedback on these elements throughout the high level and detailed design phases of the engagement. Below, the IESO has provided a summary table which outlines responses in respect of specific feedback or questions for which an IESO response was required at this time.

Stakeholder comments and IESO responses

Design Element	Stakeholder	Feedback	IESO Response
Intertie Transactions	ADG	ADG would like to seek clarification from IESO as to how the intertie settlement price will be affected if the congestion is caused by an external event outside of market participants’ control? Event such as unplanned intertie de-rate during real time. ADG’s concern is even though market participants bid/offer to reflect the expected marginal cost as intended by IESO, participants may be penalized and settled unfavourably by	Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO invites feedback on the new option presented during that meeting. Option 3 may address stakeholder concerns related to predictable PD to RT price fluctuations by using the current calculation method for the intertie settlement price when there is export

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		<p>the proposed Intertie Congestion Pricing methodology if an external event takes place thus changing the non-congested intertie to a congested intertie during real time.</p>	<p>congestion. Under option 3, the ICP when the intertie is export congested is equal to the PD intertie price less the PD internal price, and the intertie settlement price is equal to the RT intertie price plus the ICP. As a result, the export can be offered above opportunity cost to address any price bias, without impacting settlement. When there is import congestion, the IESO believes that IOG will provide adequate compensation and therefore recommends calculating the intertie settlement price equal to the minimum of the RT intertie price and the PD intertie price.</p>
Intertie Transactions	ADG	<p>In the Intertie Examples provided, under the proposed congestion pricing settlement, unexpected real time congestion can be hedged via the purchase of FTR as shown. Thus it would be helpful for IESO to factor in the cost of FTR thus offering a better cost comparison to market participants between the current intertie settlement design vs the proposed design. In theory the proposed intertie congestion pricing settlement can add an additional layer of cost to participants thus contradicting IESO's objective of minimizing the overall cost.</p>	<p>The IESO sells FTRs through an auction process for specific intertie paths for one month and one year terms. The cost of the FTR depends on the results of the auction therefore it is not possible for the IESO to accurately factor in that cost.</p>
Congestion Rents & Loss	AMPCO	<p>AMPCO cannot currently support the IESO's preliminary recommendation of zonal pricing</p>	<p>The IESO notes that this feedback was submitted prior to the July stakeholder</p>

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Residuals		<p>(with a nodal option) for non-dispatchable loads and nodal pricing for dispatchable loads. Some form of sensitivity analysis is still required which illustrates how susceptible the system (and pricing) is to volatility in the face of either supply/demand discontinuities or variability in transmission constraints. Further, the load pricing preliminary recommendation pits the need for competitive pricing against the need for preservation of marginal incentives, and places price subordinate to “market efficiency”. AMPCO cannot support this and feels that uniform pricing for loads should be implemented.</p> <p>As well, the IESO has not committed that the disbursement of residuals to negatively impacted loads will be a permanent feature of the renewed market. Instead, stakeholders have been informed that it may be permanent, but it may also be temporary which provides little reassurance.</p>	<p>meeting where the IESO presented further analysis on the issues of load pricing and residual allocation.</p> <p>This material included sensitivity analysis of the proposed zonal pricing under various scenarios and demonstrated that the benefits to customers of zonal pricing are robust to a range of system conditions.</p> <p>The IESO continues to work through these issues and will be bringing forward further materials at the stakeholder engagement session in September 2018.</p>
Reference Levels	APPrO	<p>A resource’s reference level should be reflective of its actual costs and a look back of averages of historical offers and/or LMPs is not a good indicator of the prevailing market conditions that could impact a resource’s reference price. Furthermore, there may be a need to establish an "exception" mechanism and process as gas-</p>	<p>The appropriate approach for LMP-based and offer-based reference levels will be determined during detailed design. As previously discussed, the approaches taken by other ISOs result in only a subset of relevant LMPs or offer prices being able to impact reference levels.</p>

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		fueled facilities may at times need to offer outside the permitted safe-harbours. Please refer to our April submission for further details.	Cost-based reference levels will be based on the short-run marginal cost of a specific facility. In consultation with stakeholders, the IESO will develop mechanisms for participants to 1) request review of cost-based reference levels; 2) dispute decisions to mitigate offer prices; and 3) provide fuel-cost data for the purpose of adjusting cost-based reference levels on a timely basis. The IESO will initiate the development of guidelines that will form the basis of these mechanisms in 2018.
Reference Levels	APPrO	APPrO would like to understand and hear the IESO's methodology on how the reference level for the steam turbine will be determined.	<p>Cost-based reference levels will be based on the short-run marginal cost of a specific facility.</p> <p>The IESO will determine cost-based reference levels on a daily basis. The methodology for cost-based reference levels calculation will be determined with consultation from stakeholders during detailed design.</p>
Offer Obligations	APPrO	Could the IESO please confirm APPrO's understanding that the IESO has determined that a strict reference quantity (previously must-offer obligation) rule will not be imposed on resources in either the DAM or RT/ERUC time-frame.	<p>Correct, a strict reference quantity rule will not be imposed on resources in any timeframe.</p> <p>As presented at the July 2018 meeting, the</p>

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		Furthermore, APPrO understands that the IESO is contemplating whether or not there is a need to maintain the current Availability Declaration Envelope (ADE) mechanism in the DAM.	current ADE mechanism will not be retained for the DAM.
Market Power Mitigation	APPrO	IESO has made the preliminary decision to test for global market power when both the Michigan and New York interfaces are import congested, or the net interchange schedule limit (NISL) is binding for imports. IESO indicates that other interties are not of sufficient size or connected to a sufficiently liquid market to discipline competition. However, APPrO would argue that the Hydro-Quebec intertie is sufficiently large to also warrant mitigation.	<p>It is the view of the IESO that the Quebec-Ontario interties may not be connected to sufficiently liquid markets to discipline competition. It is the preliminary view of the IESO that it is not appropriate to use import congestion on these Quebec-Ontario interties as a precondition for mitigation for global market power.</p> <p>As stated in the May 2018 stakeholder materials, only those interties that are able to provide a significant competitive discipline should be included in this global market power mitigation criteria.</p>
Market Power Mitigation	APPrO	APPrO is of the opinion that market power mitigation should also apply to capacity imports under contract / agreement with Ontario as these transactions could have the same impacts as those the IESO is trying to mitigate against from internal resources (i.e. submitting low offers with the intention to maximize their two-settlement outcome).	<p>If capacity imports are transacting on interties which have been designated as uncompetitive, then pricing rules will be applied in day-ahead and real-time to prevent the exercise of market power. The conditions under which these pricing rules will be applied will be the same for capacity imports as for other intertie transactions.</p> <p>Competition will be relied on to</p>

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			<p>discipline price outcomes on interties which are not designated uncompetitive.</p> <p>During detailed design the IESO will use the guidelines established in high level design (see July 18, 2018 presentation) as the basis for the methodology to designate uncompetitive interties.</p>
Offer Changes	APPrO	<p>An offer price change may be warranted in a situation where a natural gas-fueled facility receives a real-time unit commitment by pre-dispatch (PD) based on offers calculated and submitted using indicative fuel costs. That facility may find that, upon intraday procurement of fuel, swift market changes have significantly impacted the price of gas (similar to what happened during the polar vortex in 2014). All or a portion of start-up, speed-no-load and incremental energy costs associated with the committed run will have changed. Similarly, a natural gas-fueled facility may make arrangements to fuel a committed run or a generator's expected run based on the advisory schedule, with indicative offers representative of the operating costs. However, as changes to the commitment or advisory schedule occurs throughout the day, either before, within or as an extension to the advisory schedule's operating hours, may require additional fuel supply</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO provided the following response at that time. Due to the competitive advantage of a committed resource that is marginal, there is a need to restrict offer changes up to the full offered quantity once the resource is committed in pre-dispatch. However, the IESO agrees that prices can change significantly during unusual circumstances and this could impact generator costs for quantities above the advisory schedule, requiring flexibility to change the offer price.</p> <p>With respect to changes to the commitment schedule i.e. RT dispatch, there will be changes over the day, but offer price increases will not be allowed due to the competitive advantage of a committed resource that is marginal,</p>

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		<p>arrangements; either additional procurement or additional balancing services. During these rare occasions and to the extent the offer price restrictions are limiting, a change in offer price should be permitted to reflect the generator's true operating costs and to ensure the facility is not forced to operate at a financial loss. This same type of circumstance could apply to the make-whole payment design element, specifically as it relates to secondary decisions #3 and #4 (per slides 59-61).</p>	<p>except for rare occasions. The offer price restriction will apply only to initial advisory schedule hours, which the generator will know upon receiving binding start-up instructions, and extension of commitment beyond the initial advisory schedule will restrict changes to the offer price used at the time the extension is made.</p>
<p>Make Whole Payments</p>	<p>APPrO</p>	<p>With respect to a manual reliability commitment, APPrO agrees that a separate make-whole payment should be assessed for the reliability commitment. However, as the generator was not committed by the PD, it is likely that that generator was expecting to come offline. Consequently, the gas-fueled generator would likely not have procured fuel or transportation services for that additional (manual) reliability commitment. Therefore, the last PD offer price may no longer be reflective of a gas-fueled generator's true cost.</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO provided the following response at that time. Costs included in the cost guarantee calculation are based on three-part offers submitted to the IESO, subject to market power mitigation. Generators may have offered at higher prices to indicate intent to come offline, and offers will be assessed for market power; if no market power, the offer will not be mitigated and the cost guarantee will be based on that higher offer price. Although the conduct threshold will be lower for reliability commitments, even if offers violate the conduct threshold, they will not be mitigated if there is no impact on price. If mitigated back to the reference</p>

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			price, in the case of a reliability commitment it is very likely that the market price is higher than the reference price, and generators will be compensated accordingly.
Intertie Transactions	Hydro Quebec (June 7, 2018 Intertie Transactions Webinar)	HQEM would not support an option which disadvantages an external generator versus an internal one. Only based on the mechanism of hedging a RT flow with a virtual transaction, this would bring an unfair treatment to an external market participant in comparison to an internal generator, who will be able to perfectly hedge its financial position. Even with a DAM, there are several examples of situations where RT transactions would be necessary: 1) When an intertie is returning after an outage and the DAM window is closed. 2) When a market participant is not accepted in the IESO's DAM or in another ISO, and that participant wants to offer their production in RT. 3) When a marketer wants to do a direct RT sale in the IESO. For these reasons, HQEM is not supportive of the proposed market design.	Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO invites feedback on the new option presented during that meeting. Option 3 may address stakeholder concerns related to predictable PD to RT price fluctuations by using the current calculation method for the intertie settlement price when there is export congestion. Under option 3, the ICP when the intertie is export congested is equal to the PD intertie price less the PD internal price, and the intertie settlement price is equal to the RT intertie price plus the ICP. As a result, the export can be offered above opportunity cost to address any price bias, without impacting settlement. When there is import congestion, the IESO believes that IOG will provide adequate compensation and therefore recommends calculating the intertie settlement price equal to the minimum of the RT intertie price and the PD intertie price.

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Intertie Transactions	Hydro Quebec (June 7, 2018 Intertie Transactions Webinar)	During June 7th, the IESO mentioned they would be listening and willing to study other options market participants would suggest. HQEM would like to request the deadline to suggest an alternative option to those already proposed.	The deadline for stakeholder feedback following the June 7 th meeting was June 30 th . Thank you to all those stakeholders who provided their responses.
Congestion Rents & Loss Residuals	MAG Energy Solutions	MAG Energy would like more details on why Congestion Rents and Loss Residuals (CRLR) will be allocated to loads and not to exports as well, and how CRLR will be calculated. In their feedback submission, MAG Energy provided 3 examples to illustrate that 1) Exports should be entitled to the residuals disbursement as much as loads. 2) If the IESO only allocates residuals to loads then there can be cases where the average monthly zonal price of a zone will be lower than the supplier weighted price. Or alternatively, if the disbursement is capped so the average monthly zonal price does not go under the uniform supplier weighted price there will still be residuals to allocate and it is unknown what will happen to the over collected amount of money that is not disbursed. 3) The internal congestion price is the same for the exporter and the load and this is why CRLR should be allocated to the exports as well as the loads. MAG Energy would also like to point out that exports and loads are usually looked at together when charges are allocated, such as make-whole	Response forthcoming.

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		payment uplifts, and MAG strongly believes that it should be the same for the credits.	
Financial Transmission Rights	MAG Energy Solutions	MAG Energy would like to confirm that the IESO does not plan to introduce an internal FTR market, where rights are sold each month and paid with congestion revenues, as seen in US jurisdictions such as PJM, NE, NYISO and MISO. Our understanding is that the Congestion Rents and Loss Residuals will supersede the usual internal FTR market, is that correct?	Response forthcoming.
Virtual Transactions	MAG Energy Solutions	We strongly believe that the Day Ahead market and the possibility to do virtual transactions should start from Day 1 of the new Single Schedule market.	As presented at the July 2018 meeting, virtual transactions will be implemented on Day 1 of the single schedule DAM.
Intertie Transactions	MAG Energy Solutions	It seems valid to aim for a better forecast of intertie schedules at T+3 and beyond. DAM schedules are determined the day before at around 13:00. Those schedules will follow forecasted market conditions and limitations at that time, which can drastically change in RT. For example, suppose that at the closing time of the DAM, the forecasted capacity of the ONT-MISO transmission line is 600 MW for the next day. This forecast results in only 600 MW bought in the IESO DAM for every hour. However, in real-time, the transmission line capacity is back at 1400 MW and is fully scheduled. There will be an 800 MW difference between the T+3 forecast capped at 600 MW and the T+2 schedules of 1400	Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO provided the following response at that time. The IESO agrees that the PD prices and schedules in T+3 and beyond may be less accurate than 2 hours before RT due to limiting the transactions considered. This is acceptable because the IESO needs to maintain reliability, and including non-DAM transactions in T+3 and beyond could also cause inaccurate prices and schedules if they do not flow in RT, impacting efficiency/cost and also impacting system reliability. For this reason, the IESO does not propose any

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		<p>MW. This difference will come up at each hour of the day, most probably resulting in non-efficient unit commitments and price signal imprecisions. Since the information was available to make more efficient schedules, the current proposal of excluding non-DAM intertie transactions from the PD evaluation for T+3 and beyond does not seem to be the best option available.</p>	<p>change to the preliminary decision.</p>
Intertie Transactions	MAG Energy Solutions	<p>If IESO's objective is to use the best available forecast for intertie flows at T+3, there can be other solutions than to evaluate intertie transactions up to their DAM schedule and these should be considered before a final decision is made. The IESO could look at how other markets using forecasted prices, such as NYISO, evaluate intertie flows prior to schedules. The IESO could explore alternative options to determine the maximum MW evaluated at T+3 and beyond such as up to actual average flow per intertie in the previous hours in RT. Also the IESO could reevaluate a few months after the new market is deployed what is the best option to produce accurate forecast at T+3 between up to DAM schedules or up to a flow average of the previous hours.</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO provided the following response at that time. Jurisdictions like New York and Michigan look ahead only a few hours, limiting the impact of non-binding transactions. SPP, which has a longer look-ahead period similar to the IESO design, does not consider non-DAM intertie transactions in its intra-day flows. It is not appropriate to forecast non-binding intertie transactions because past realized quantities may not be indicative of future quantities.</p>
Intertie Transactions	MAG Energy Solutions	<p>In their submission, MAG Energy provided an expanded list of 4 examples to demonstrate that the proposed Option 2 limits the settlement price</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO invites feedback on the new option</p>

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		<p>of imports and increases the settlement cost of exports when the intertie is scheduled to full capacity. The proposed method will discourage importers and exporters from fully scheduling the interties even when the predispach price signals would indicate that the interties should be fully scheduled. Examples 1 and 4 demonstrate that Option 2 will severely discriminate between importers and generators, and will result in situations where importers will earn much less revenue than generators, even though both the importer and the generator are offering at the same or similar price. Example 2 demonstrates that an importer who is bidding according to price signals may be penalized with a substantial drop in revenue as soon as 1 MW more is imported to fully schedule the intertie. Example 3 demonstrates that Option 2 exposes exporters to a very high risk of financial loss, with no opportunity to earn a proportionate level of reward. MAG would like to reiterate that importers/ exporters face different risks than dispatchable generators/ loads.</p>	<p>presented during that meeting. Option 3 may address stakeholder concerns related to predictable PD to RT price fluctuations by using the current calculation method for the intertie settlement price when there is export congestion. Under option 3, the ICP when the intertie is export congested is equal to the PD intertie price less the PD internal price, and the intertie settlement price is equal to the RT intertie price plus the ICP. As a result, the export can be offered above opportunity cost to address any price bias, without impacting settlement. When there is import congestion, the IESO believes that IOG will provide adequate compensation and therefore recommends calculating the intertie settlement price equal to the minimum of the RT intertie price and the PD intertie price.</p>
Intertie Transactions	MAG Energy Solutions (June 7, 2018 Intertie Transactions Webinar)	MAG would like IESO to provide more explanations as to why they are not proposing an intertie settlement methodology such as the one NYISO has implemented and how their proposal is better for IESO market participants.	The current NYISO approach using Coordinated Transaction Scheduling (CTS) is not being considered by the IESO at this time because Ontario utilizes hourly intertie schedules which are not compatible with CTS. More frequent

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			scheduling at the interties is not in the scope of MRP.
Intertie Transactions	MAG Energy Solutions (June 7, 2018 Intertie Transactions Webinar)	MAG believes market efficiency will be greatly reduced with the implementation of Option 2 and thinks IESO should contact neighboring jurisdictions / ISOs/ RTOs before going forward as the volume at the interties may decrease significantly.	Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO invites feedback on the new option presented during that meeting.
Intertie Transactions	MAG Energy Solutions (June 7, 2018 Intertie Transactions Webinar)	MAG would like to know what will happen with the intertie congestion collected in RT, either under Option 1 or 2, as presented in the 4 examples submitted. This money will not be distributed to TR holders as it is today. This could represent huge amounts that need to be thought of in this part of the process.	Future FTR collection and distribution will be reviewed with stakeholders as part of a separate FTR initiative outside of MRP, following the completion of SSM and DAM High Level Designs.
Energy Price - Loss Component	OPG	As stated in OPG's SSM comments on January 19, 2018, OPG supports more frequent updates of loss factors short of moving to Real-Time dynamic loss factors which previously resulted in dispatch volatility issues. OPG looks forward to the IESO's proposed solutions for implementation.	As discussed in the May 2018 stakeholder session, the IESO will discuss this issue with vendors and will inform stakeholders of the applicable options.
Congestion Rents & Loss Residuals	OPG	The January 30, 2018 load pricing presentation that first introduced the concept of a disbursement process stated it could be introduced as a 'temporary measure to be phased out over a number of years' (to mitigate impacts	There are currently no plans to institute a traditional FTR market. The IESO believes that given how Ontario has historically invested in transmission,

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		<p>on Ontario loads moving away from a uniform price). Is the preliminary design decision intended to be temporary with the eventual transition to a traditional FTR market?</p>	<p>residuals collected under SSM residuals should be returned directly to loads.</p> <p>Any potential future changes to this allocation methodology will be subject to a standard stakeholder process.</p>
Offer Obligations	OPG	<p>The IESO concluded that the variability of reference quantities makes it impractical for use in offer obligations in the DAM. Instead, the IESO recommends continuing with the use of the Availability Declaration Envelope (ADE) to assess reliability while using reference quantity in after-the-fact assessments of potential physical withholding for market power mitigation. With respect to the use of ADE, OPG recommends that the application of ADE for hydroelectric resources be similar to that of variable generators where ADE represents a resource's registered capacity less derates. A hydroelectric resource's ADE should not be used in the IESO's assessment for reliability. Similar to the treatment of variable generation, OPG recommends the IESO's reliability assessment be based on forecast conditions (reflected through offers). This treatment encourages a hydroelectric resource's DAM submission to more accurately reflect expected conditions rather than an adequate ADE in Real-Time. As a result, the IESO's reliability assessment would</p>	<p>To clarify, the IESO informed stakeholders that it would consider whether maintaining the ADE mechanism was still required under a DAM.</p> <p>As presented at the July 2018 meeting, the ADE mechanism will not be retained for the DAM and participation in the DAM will be voluntary for all resource types.</p>

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		more accurately reflect expected conditions.	
Market Power Mitigation for Physical Withholding	OPG	OPG is interested in how other markets address concerns of physical withholding for merchant generators without must offer obligations.	According to the materials reviewed by the IESO, the treatment of physical withholding in other jurisdictions does not vary according to whether a supply resource has a must-offer obligation.
Uplift Recovery	OPG	Slide 44 of the IESO's presentation illustrates how load and virtual supply cause additional resource commitments. As the diagram does not show virtual loads, please clarify how virtual loads would factor into the proposed uplift recovery calculation. Specifically: i) If the economical virtual load bids and virtual supply offers are equivalent, would the virtual supply offer still be subject to an uplift charge if the RUC run required additional unit commitment? ii) Is there an uplift charge allocated if a virtual load bid causes additional unit commitments in the Bid pass that wouldn't be required in the RUC pass?	<p>i) Yes, even if cleared virtual supply offers and load bids are equivalent, any cleared virtual supply offers could still be subject to an uplift charge if the RUC run committed additional units and a make whole payment was required.</p> <p>ii) No, virtual loads are not subject to uplift charges because their bids would only drive DAM prices higher, thereby lowering the frequency and magnitude of DAM uplift charges.</p>
Intertie Transactions	OPG	The IESO presented that pre-dispatch will evaluate emergency and capacity backed intertie transactions over all hours of the Look Ahead Period (LAP). Would the IESO please confirm if pricing principles in the pre-dispatch timeframe	Yes, the IESO confirms that the pricing principles in the pre-dispatch timeframe will be consistent with those discussed in the SSM stream for out of market operator actions including emergency

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		<p>will be consistent with those discussed in the SSM stream “Out-of-market Operator Actions.” This stream states that prices should reflect scarcity to encourage market response and not allow actions to create counter intuitive pricing. For example, if emergency transactions are scheduled in pre-dispatch, dispatch advisory schedules will consider the presence of the transactions; however, they will not be reflected in the LMPs.</p>	<p>and capacity backed intertie transactions.</p>
Market Power Mitigation	OPG	<p>Intertie transactions are not cost-based and do not have reference prices like generators. As a result, traders face an unknown downside risk in the event a transaction is mitigated. For this reason, OPG believes that in the event an intertie has been designated as uncompetitive, notification should be given to participants so they can react accordingly.</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO confirms that designation of an uncompetitive intertie will be communicated publicly so that traders will know in advance if an intertie has been designated uncompetitive.</p>
Intertie Transactions	OPG (June 7, 2018 Intertie Transactions Webinar)	<p>OPG does not agree with IESO’s proposed Option 2 treatment of intertie congestion pricing because it believes the intertie settlement price does not properly reflect the marginal cost of energy at the interface. In moving to locational marginal pricing, OPG believes intertie pricing concepts should be similar to those of internal resources at specific locations, with the added import/export congestion component settling every 5-minutes, when respecting external interface limits. Intertie pricing could be</p>	<p>Noting that this feedback was submitted prior to the July stakeholder meeting, the IESO invites feedback on the new option presented during that meeting. Option 3 may address stakeholder concerns related to predictable PD to RT price fluctuations by using the current calculation method for the intertie settlement price when there is export congestion. Under option 3, the ICP when the intertie is export congested is equal to</p>

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		<p>expressed as follows: LBMP = Marginal Cost of Energy (i.e. Reference Bus Price) + Marginal Cost of Congestion + Marginal Cost of Losses. The Marginal Cost of Congestion can be further broken down into congestion from internal constraints (i.e. from the Reference Bus to the Interface) and congestion from external interface constraints (i.e. ramp, ATC), thus: Marginal Cost of Congestion = Marginal Cost of Internal Congestion + Marginal Cost of External Interface Congestion. OPG suggests the IESO consider a model similar to what NYISO has implemented for the real-time market. OPG also reiterates its comments provided January 19, 2018 that Option 2 should not be used on the basis for consistency of price treatment for interties and internal resources because: 1) The risks and decision-making considerations that factor into offers of marketers differ from those of internal resources; and 2) Generators are 5-minute dispatchable while interties are committed and dispatched hourly.</p>	<p>the PD intertie price less the PD internal price, and the intertie settlement price is equal to the RT intertie price plus the ICP. As a result, the export can be offered above opportunity cost to address any price bias, without impacting settlement. When there is import congestion, the IESO believes that IOG will provide adequate compensation and therefore recommends calculating the intertie settlement price equal to the minimum of the RT intertie price and the PD intertie price.</p> <p>The current NYISO approach using Coordinated Transaction Scheduling (CTS) is not being considered by the IESO at this time. This could be reviewed in the future when more frequent scheduling at the interties is discussed.</p> <p>The dynamic ICP approach is retained under the new option 3 for import congestion, and it is based on the approach implemented by NYISO prior to introducing CTS.</p>
Intertie Transactions	OPG (June 7, 2018)	OPG suggests that intertie transactions be settled reflecting real-time congestion on a 5-minute	It is not be possible to calculate 5-minute intertie congestion prices without

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	Intertie Transactions Webinar)	basis at the interface.	implementing 5-minute intertie schedules, which is not being considered at this time.
Intertie Transactions	OPG (June 7, 2018 Intertie Transactions Webinar)	As changes to the market are being made in Market Renewal, OPG recommends that the IESO consider shortening the current mandatory window to a duration that more closely aligns with neighboring markets. Benefits of this change include providing greater flexibility to resources (both internal and interties) in responding to market signals. A shorter mandatory window that aligns with NYISO and MISO would also mitigate trading risks associated to committing to Ontario while the neighboring market is still open. Furthermore, the ratepayer would benefit from this change as the ability to more quickly respond to market signals would reduce the overall cost to the market. As other markets with DAM and RT markets are able to accommodate a shorter mandatory window, OPG would appreciate if the IESO could identify any barriers that would prevent this change in Ontario.	Given hourly scheduling of intertie transactions, the PD engine will only have the opportunity to complete two runs prior to real time within the current mandatory window timeframe. Reducing the mandatory window could impact reliability. Furthermore, a shorter mandatory window would require changes to established IESO cross-jurisdictional intertie procedures, such as the 90-minute transaction checkout with NYISO, to ensure operational alignment. This is beyond the scope of MRP.
Offer Obligations	Power Advisory	The Consortium has a major concern regarding the two settlement risk for VG resources resulting from must-offer participation in the DAM when VG resources are unable to comply with their DAM energy production schedules in the RTM.	As presented at the July 2018 meeting, participation in the DAM will be voluntary. This allows all resources, including VG, to manage their two-settlement exposure by choosing how much they offer into the DAM. This

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		<p>Has the IESO considered DAM design that incorporates energy production forecasts for VGs, without the financially binding commitment (in whole or part?) that is consistent with operations in other wholesale electricity markets?</p>	<p>design is consistent with other jurisdictions.</p>
Two Settlement for Supply	Power Advisory	<p>Has the IESO compared the proposed DAM design regarding participation obligations of VGs to those currently used in other wholesale electricity markets? Please provide a list of design elements for VGs that are analogous to these other markets.</p>	<p>Yes. DAM participation is voluntary for VG resources in other jurisdictions unless an offer obligation is imposed by a capacity obligation. Other jurisdictions also use their own centralized VG forecast in the reliability pass of DAM and to support intra-day (i.e. predispach) scheduling and real-time dispatch.</p>
Market Power Mitigation for Physical Withholding	Power Advisory	<p>The IESO has clarified that the reference quantity will not amount to a strict offer obligation, but will instead be used when conducting after-the-fact assessments of potential physical withholding. The accuracy of VG forecasts is less reliable in the day-ahead timeframe. Therefore the Consortium seeks to understand what the after-the-fact assessments will be based on regarding VGs. For example will a VG resource's forecast be used as a reference?</p>	<p>In general, any available capacity not offered, regardless of fuel type, could be subject to an after-the-fact assessment for physical withholding if the resource's offers materially increased prices.</p>

Design Element	Stakeholder	Feedback	IESO Response
Supply Participation: Variable Generation	Power Advisory	The Consortium requests that the IESO produce a series of illustrative examples compiling all aspects of the design thus far, demonstrating VG participation in the DAM from the day-ahead timeframe and into real-time, while incorporating aspects of the VG forecast and two-settlement process.	The IESO will provide illustrative examples through a series of education and awareness sessions in the fall which will provide stakeholders with a practical understanding and walk through of the energy workstream HLDs. Further details of these planned sessions will be shared with stakeholders in the near future.
Commercial Mechanisms	Power Advisory	In order to manage risks associated with fuel security in real-time (i.e., fuel is not available in real-time as forecast day-ahead) and a financially binding day-ahead schedule, the IESO suggested at the May 23 DAM stakeholder consultation meeting that VG resources could use several laminations of price-quantity (P/Q) pairs within each hour of their DAM offers. For example, a 100 MW wind generator with a day-ahead energy production forecast of 80 MW could conservatively offer 50 MW at -3\$/MWh, and 30 MW at \$1,000/MWh. What was not acknowledged by the IESO at that meeting is that most VG resources are also subject to contractual price caps (e.g., \$0/MWh), meaning that they are not paid under the supply contract for energy delivered if that energy was offered at a price exceeding a cap specified within the contract. This interaction between VG contracts (e.g., Feed-in Tariff, etc.) and IESO Market Rules and Market Manuals is an example of the type of	<p>IESO's Contract Management has previously advised stakeholders that contracted VG resources will be able to choose to offer the IESO's forecast into the day ahead market and can thereby avoid exposure to additional risk from day ahead settlement. Furthermore, VG resources are not subject to contractual price caps in the contract. The \$0/MWh is a reference offer price, where any energy that is offered above \$0/MWh in real time and is curtailed, is then not eligible for compensation as foregone energy.</p> <p>The IESO continues to be committed to work with its contracted counterparties to address market renewal implications. IESO Contract Management expects to meet again with contracted VG market participants in early fall to discuss the proposed framework in more detail.</p>

Design Element	Stakeholder	Feedback	IESO Response
		<p>issues that will require further discussion with both IESO Contract Management and the IESO Market team and Market Participant VG contract counterparties. For this and other reasons (outlined in the Consortium’s Contracts submission to the IESO dated November 23, 2017), the Consortium recommends that the IESO continuously work with Suppliers (i.e., VGs) to understand contract implications relating to IESO’s Market Renewal Program (MRP).</p>	
General	Power Advisory	<p>The Consortium identified several areas where VG resources will be exposed to increased complexity and administrative tasks associated with the proposed DAM design.</p>	<p>The IESO will provide illustrative examples through a series of education and awareness sessions in the fall to show that the proposed design introduces minimal administrative complexity.</p>
Virtual Transactions	Power Advisory	<p>The Consortium requests more information on how virtual transactions may be used to help address the risks identified within their submission.</p>	<p>Under a voluntary DAM, virtual transactions need not be used to manage two-settlement risk. A resource can manage this risk by choosing how much they offer into the DAM.</p>
General	Power Advisory	<p>The Consortium proposes an in-person meeting with the IESO DAM design team to further discuss the contents of this (the June 22, 2018) submission.</p>	<p>The IESO met with the Consortium to further discuss their feedback submission on July 16, 2018.</p>
Participation	Power Advisory	<p>With respect to the day-ahead market (DAM), for embedded variable generators, there is a need for clarity with respect to expectations for participation and risk management with respect</p>	<p>The IESO clarified at the July 2018 meeting that participation in the DAM will be voluntary for all resources, including embedded and directly</p>

Design Element	Stakeholder	Feedback	IESO Response
		to forecasting.	connected VG.

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